

Giant Mechanical Mosquitoes to Conquer Nature!

Milan, Feb. 20.

SELF-MOVING mechanisms modelled on the lines of gigantic mosquitoes and designed to enable man to conquer Nature in those places where the climate or the formation of the country make it impossible for him to enter or to remain for any length of time have been invented by Dr. Gustav Luchy, a Swiss scientist. Dr. Luchy, who has been collaborator with the Chevalier Pini, the inventor of astonishing machines for exploring the sea bottoms, asserts that if Captain Scott had been equipped with one of his mechanical mosquitoes he could have made his way to the South Pole within a few hours after leaving his base. He also claims that the machines will make impossible any repetition of the Scott tragedy, and will enable man to wrest from the Antarctic continent its mineral treasures without exposing their operators to the slightest danger.

Despite man's boasted mechanical progress, his engines of locomotion are singularly limited. The locomotive is dependent upon rails; the automobile demands at least a fairly smooth surface on which to run; and the flying machine as yet lacks efficient carrying power. None of the three is equipped to provide adequate shelter for any length of time in parts of the earth's surface where without shelter man cannot exist. Dr. Luchy's problem was to find a mechanism which could be independent of rails, would not be deterred by obstacles impassable to the automobile, would have practicable carrying power, and would provide shelter for a sufficient length of time to enable them to do whatever they had set out to do.

In the formation of the mosquito he claims he found the combination of leg height with carrying power that he desired. The appearance of the machines in action would recall vividly the appearance of the Fighting Machines of the Martians in H. G. Wells's "War of the Worlds," a description of which is reprinted on this page.

Only small working models of the mechanical mosquitoes have as yet been made by the inventor, but these seem to be as practicable as the paper plans promised. A large working model forty feet high when the long, articulated legs are fully extended, is now in course of construction. In the body are the engines which provide its motive power and the quarters for a crew of ten men. The head is nothing more than a huge engine, from which are operated the drills, cutting tools, lifting cranes or whatever it is that is necessary for the work at hand. The inventor has in mind still larger machines built on exactly the same lines. He believes that there is no limit to the size of his mechanisms, and that it will be possible to build a mechanical mosquito big enough to walk through the shallow depths of the ocean, and to be powerful enough to cut through earth's crust to the internal fires—the same plan that has been suggested by the famous astronomer, Camille Flammarion, as a solution of the problem of our future source of energy when our coal beds give out.

The Luchy machines, besides being foreshadowed in Wells's fanciful story, have actual predecessors in travelling stages in use at Whitby, England, for marine work. These machines, the invention of Messrs. W. Hill & Co., are now being used for the construction of concrete breakwaters and similar operations. A description of their simpler mechanism will serve to make a trifle clearer the mode of locomotion of the Luchy machines. The Hill stages have eight legs and feet, four of which are used at a time when in motion. There are two massive steel framework structures, one inside the other, the outer being square, and the inner rectangular, the latter being somewhat smaller than the other. The legs, comprising stout members, which can be moved up and down vertically for a considerable distance, are fitted at the

corners of each stage, and are pointed at the lower end to secure a firm grip upon the rocky seabed.

The walking action is secured as follows: The outer frame has its front legs lowered until the spuds (or feet) secure a grip upon the seabed. The legs of the inner stage are then raised to clear all obstructions when the stage is moved forward the full extent of its travel, which brings it against the forward end of the outer stage, when its legs are lowered to the ground. The legs of the outer stage are now elevated vertically, so that the latter rests upon the former.

The outer stage is now moved forward until the inner stage is brought into contact with the rear end of the outer stage. The legs of the last named are then lowered, those of the inner stage raised, and the same cycle of operation is repeated. The "walking man" is quite a massive affair. The outer frame is 18½ feet square, and it stands 33 feet high from the bottom of the spuds to the working deck level. The inner stage is 28½ feet by 40½ feet. The result is that the machine can make a forward stride of about ten feet, while the inner stage can move sideways for about three feet. The feet are raised and lowered by screw gearing driven by electric motors. A complete movement can be effected in fifteen minutes.

The Weird, "Living" Machines of the Octopus-Like Martians

(From "The War of the Worlds," by H. G. Wells.)

AND this Thing I saw! How can I describe it? A monstrous tripod, higher than many houses, striding over the young pine trees and smashing them aside in its career; a walking engine of glittering metal, striding across the heather; articulate ropes of steel dangling from it, and the clattering tumult of its passage mingling with the riot of the thunder. A flash, and it came out vividly, keeling over one way with two feet in the air to vanish and reappear almost instantly as it seemed, with the next flash, a hundred yards nearer. Can you imagine a milking stool tilted and bowed violently along the ground? That was the impression those instant flashes gave. But instead of a milking stool imagine it a great body of machinery on a tripod stand.

Then suddenly the trees in the pine wood ahead of me were parted, as brittle reeds are parted by a man thrusting through them; they were snapped off and driven headlong, and a second huge tripod appeared, rushing, as it seemed, headlong toward me.

Seen nearer the Thing was incredibly strange, for it was no mere insensate machine driving on its way. Machine it was, with a ringing metallic pace, and long, flexible, glittering tentacles, one of which gripped a young pine tree, swinging and rattling about its strange body.

It picked its road as it went striding along, and the brazen hood that surmounted it moved to and fro with the inevitable suggestion of a head looking about it. Behind the main body was a huge mass of white metal like a gigantic fisherman's basket, and puffs of green smoke squirted out from the joints of the limbs as the monster swept by me. And in an instant it was gone.

Its motion was so swift, complex and perfect that at first I did not see it as a machine, in spite of its metallic glitter.

It has been found that, with this travelling stage, work can be continued in the roughest weather. Indeed, it was the heavy seas experienced at Peterhead that led to its invention.

The Luchy machines have six articulated legs, three on each side of the body. Each leg ends in a deeply ridged foot, designed to give gripping power and to insure stability. The parts where the legs come from the mechanical body move on ball joints, thus giving free movement in all directions.

A study of the diagram on this page gives more clearly than any written description could, the essential principles of the Luchy invention.

In the Antarctic are enormous fields of mineral wealth. Captain Scott reported great coal beds and evidences of platinum, gold, iron and other useful minerals have been reported by other explorers. The great question has been how to get this mineral wealth away from such a place. The land is frozen and for a great part of the year is swept by terrific blizzards, in which man can hardly live, much less work. But it is claimed for the Luchy invention that several machines, each capable of holding crews of forty or fifty men, could be taken down to the Antarctic land mass. There they could be adjusted and could be effectively worked for the greater part of the year at least.

The boring tools in the head of the

mosquitoes can be manipulated entirely from the inside of the machine itself and the body of the mechanism provides perfect shelter against the worst climatic conditions that could be encountered.

The machines will be made of steel and aluminum, and are not inordinately heavy. They are run by the Diesel oil machines, and the problem of fuel is the difficult one. It would be with coal. It will even be possible to use one machine as an operating mechanism and to use several others as carriers for whatever ores or other earth's treasures their crews are after.

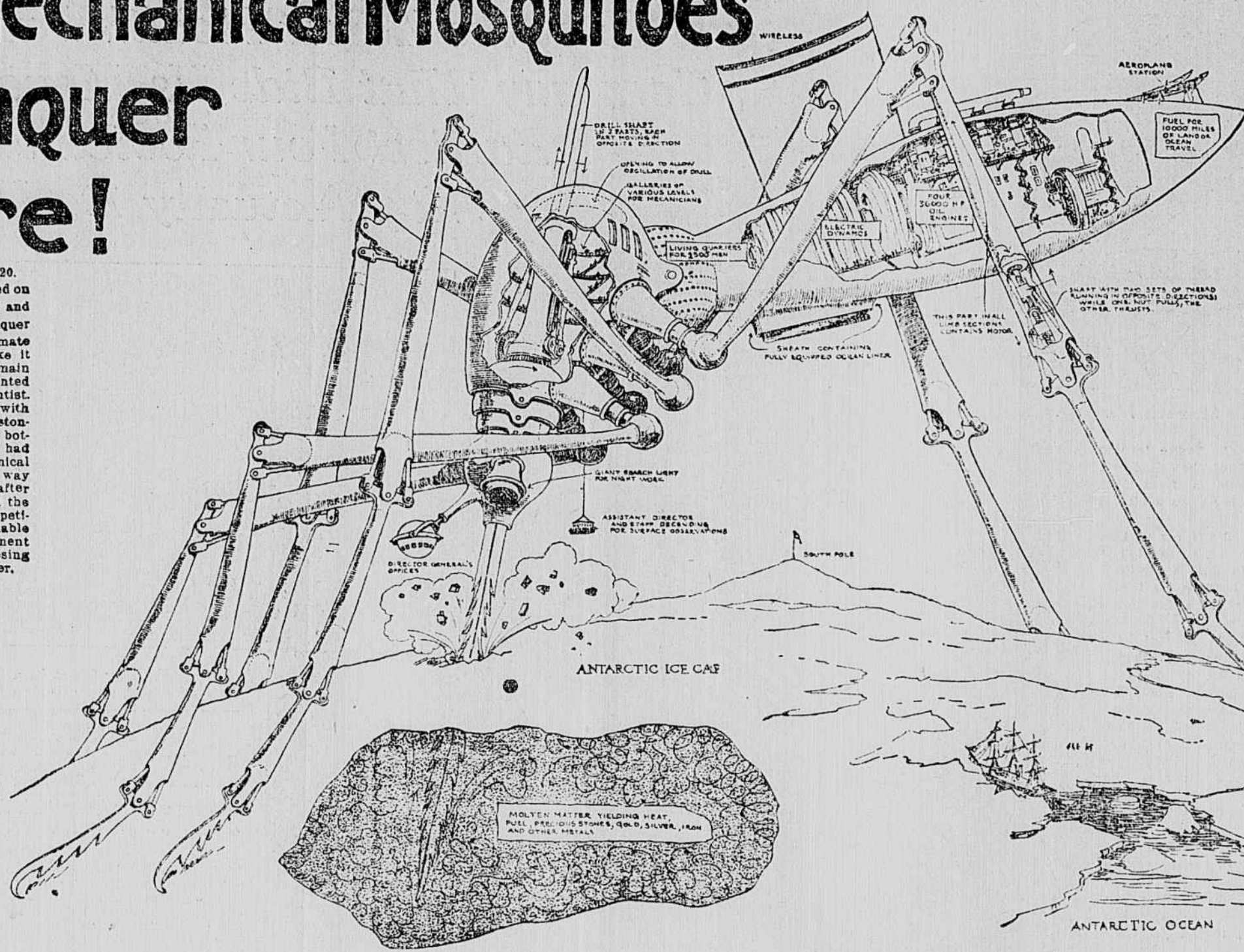
For work in deserts, where the only means of access is by caravan, it is thought that the Luchy machines will be extremely useful. They do away with the necessity of erecting elaborate buildings or elaborate fortifications against hostile tribes, and can move easily and swiftly from place to place. They carry their own supplies and their own means of

movement, and so are not dependent upon their surroundings.

In tropical countries, where locomotive travel is impeded by the vegetable growth, the machines can be equipped with cutting tools, and could clear a path to whatever point aimed at in a fraction of the time compared to the slow methods now in use.

Finally their use as war engines, as terrible as the fanciful "walking tripods" of Mr. Wells's Martians, is being brought to the attention of the Italian Government.

It is only fair to say that many scientists are skeptical as to the practicality of the machines. They grant that they will have limited use, but doubt if they can be extended to the deep sea vading size predicted by Dr. Luchy. Complexity of parts, weight and the enormous energy needed to run them on a large scale are put forth as arguments against their unlimited use.



Picture Diagram Illustrating the Inventor's Idea of the Development of the Luchy Machine, Drawn from Sketches of the Small Working Model. The Essential Points of the Invention Can Be Grasped Easily by Study of the Carefully Worked Out Illustration. The Artist Has Shown the Machine at Work in the Antarctic, Boring Through the Ice Cap Down into the Internal Fires of the Earth. While the Inventor Has Suggested the Possibility of Tapping Earth's Heat in This Way, Other Scientists Believe Such a Development Highly Impracticable. Not Only Would the Tools Have to Be of Impossible Length and Size, but It Would Not Be Possible to Generate Enough Power to Run Them. Besides, the Internal Fires, When Struck, Would Destroy the Tools Instantly. The Future of the Invention Lies, It Is Believed, in Smaller Machines Which Are



Striking the Earth's Internal Fires. A Drawing by Lano, the Distinguished French Imaginative Artist, of the Great Bore Suggested by Camille Flammarion as a Means of Providing Heat and Energy for the Future.



A Lano Drawing of the Fighting Machines of the Martians in Wells' "War of the Worlds"—Giant Mechanisms Which the Luchy Inventions Somewhat Resemble.